PRODUCTS

Status Mode Messages

Header Information

JBM Electronics Co. has developed a set of headers to provide a mechanism for bridging the different characteristics between the "frame-type" data of a polled legacy protocol and the "stream-type" data of a TCP/IP connection. The headers pass information between a customer-developed application and the Gateway. The header is stripped before the data is sent to the serial device.

We provide an expanded theory of operation, examples of header (status) processing logic and example code which can be used to as a guide when adding support for our headers to a TCP application. This code will simplify the effort necessary to support the headers. The available information on our home page is:

Headers	Headers.pdf	This document
Status Message Examples	Smexex1.pdf	Smexex2.pdf
Header Example Code	Chdrproc.pdf	hdrtst.zip

Status Mode Messages

The status messages are used by a TCP/IP application to obtain specific information about certain low-level information at a remote serial interface (where supported See note 1), or to control certain low-level operations. For example, the application may initiate/terminate polling, detect line activity and a variety of error conditions. All of the status messages conform to the following format:

Byte	Bit(s)	Field	Description
0	7-0	Format ID	Identifies the status format. The following values are defined: **x'01** - Format 1. All other values are reserved.
1	7-0	Version ID	Identifies the version. The following values are defined: **x'01** - Version 1. **x'02** - Version 2. All other values are reserved.

Status Mode Messages (continued)

<table>
<tr><th>Byte</th><th>Bit(s)</th><th>Field</th><th>Description</th></tr>
<tr><td>2-n</td><td>-</td><td>Status</td><td>Content is both version and Port Controller implementation dependent, and take on different forms depending on whether or not the status message is a request or a response.

Version 1 - Request format
<table>
<tr><th>Byte</th><th>Bit(s)</th><th>Field</th><th>Description</th></tr>
<tr><td>2</td><td>7-4</td><td>Reserved</td><td>Always zeroes.</td></tr>
<tr><td></td><td>3-0</td><td>Command Request ID</td><td>Identifies the type of status request being commanded. The following values are defined:

0001 – Line Status Request.

All other values are reserved.</td></tr>
<tr><td>3</td><td>7-0</td><td>Reserved</td><td>Always zeroes.</td></tr>
</table>

Versions 1 & 2 - Response format
<table>
<tr><th>Byte</th><th>Bit(s)</th><th>Field</th><th>Description</th></tr>
<tr><td>2</td><td>7-5</td><td>Reserved</td><td>Always zeroes.</td></tr>
<tr><td></td><td>4</td><td>Solicited/ Unsolicited Indicator</td><td>Indicates whether or not the status is in response to a previous request, or has been generated as an Unsolicited status delta. The following values are defined:

1- Solicited Response.
0 - Unsolicited Response.</td></tr>
<tr><td></td><td>3-0</td><td>Line Status Indicator</td><td>Indicates the current state of the serial interface. The following values are defined:

0100 - Line senses 'activity' (polling).
0010 - Line has physical connection.

All other values are reserved.</td></tr>
</table>
</td></tr>
</table>

Status Mode Messages (continued)

<table>
<tr><th>Byte</th><th>Bit(s)</th><th>Field</th><th colspan="3">Description</th></tr>
<tr><td></td><td></td><td></td><td>Byte</td><td>Bit(s)</td><td>Field</td><td>Description</td></tr>
<tr><td></td><td></td><td></td><td>3</td><td>7-0</td><td>Input Message Status Indicator</td><td>Indicates status relating to data received by the serial interface. The following values have been defined:

Poll-Select Protocol

<table>
<tr><td>0000 0001</td><td>Message failure: Parity/BCC error.</td></tr>
<tr><td>0000 0010</td><td>Message failure: Timed out during receive.</td></tr>
<tr><td>0000 0100</td><td>No response to Poll.</td></tr>
<tr><td>0000 1000</td><td>Garbled response.</td></tr>
<tr><td>0001 0000</td><td>DCD time-out.</td></tr>
<tr><td>0010 0000</td><td>Device resumed responding to Polls.</td></tr>
</table>
Bisync (Contention) Protocol

<table>
<tr><td>0000 0010</td><td>Negative confirmation to message that was discarded.</td></tr>
<tr><td>0000 1000</td><td>Received bad text, NAK count exceeded.</td></tr>
<tr><td>0001 0000</td><td>Receiver timed out waiting for text.</td></tr>
<tr><td>0010 0000</td><td>NAK count exceeded for transmitted text, message discarded.</td></tr>
<tr><td>0100 0000</td><td>No response to line bid, message discarded.</td></tr>
</table>
Bisync (3270) Protocol

<table>
<tr><td>0000 0001</td><td>Received 'Intervention Required'.</td></tr>
<tr><td>0000 0010</td><td>Negative confirmation to message that was discarded.</td></tr>
<tr><td>0000 0100</td><td>Received 'Device Busy', pending 'Device End'.</td></tr>
<tr><td>0000 1000</td><td>Received bad text, NAK count exceeded.</td></tr>
<tr><td>0001 0000</td><td>Receiver timed out waiting for text.</td></tr>
</table>
</td></tr>
</table>

Status Mode Messages (continued)

<table>
<tr><th>Byte</th><th>Bit(s)</th><th>Field</th><th colspan="3">Description</th></tr>
<tr><td rowspan="6"></td><td rowspan="6"></td><td rowspan="6"></td><td>Byte</td><td>Bit(s)</td><td>Field</td><td>Description</td></tr>
<tr><td>3</td><td>7-0</td><td>Input Message Status Indicator</td><td>Bisync (3270) Protocol continued
<table><tr><td>0010 0000</td><td>NAK count exceeded for transmitted text, message discarded.</td></tr><tr><td>0100 0000</td><td>No response to line bid, message discarded.</td></tr><tr><td>1000 0000</td><td>'Device End' received.</td></tr></table>All other values are reserved.</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="4">Version 2 - Request Format</td></tr>
<tr><td>Byte</td><td>Bit(s)</td><td>Field</td><td>Description</td></tr>
<tr><td>2</td><td>7-4</td><td>Command Request ID</td><td>Identifies the type of status request being commanded. The following values are defined:

0001 - Line Status Request.
0010 - Terminal Status Command: Begin Polling.
0100 - Terminal Status Command: Stop Polling.

All other values are Reserved.</td></tr>
<tr><td></td><td>3-0</td><td>Reserved</td><td>Always zeroes</td></tr>
<tr><td></td><td>3</td><td>7-0</td><td>Reserved</td><td>Always zeroes</td></tr>
</table>

Status Message Operation

Status messages may be either *unsolicited*, where the remote serial interface simply generates a status to report a change in state, or *solicited*, involving is a simple conversational request-response exchange initiated from the TCP/IP application.

When using the TYPE 2 Extended Header, the Poll Code fields may be used to identify a specific logical channel on the remote serial interface. If the fields are set to zero (by default when using the TYPE 1 header), the status reported is that of the physical device in general.

Examples of status message exchanges are available on our home page.

Notes: 1. *Not all Port Controllers may support the extended header/status messages. Contact JBM technical support if you have questions regarding a specific configuration.*